

**WE CLAIM:**

1. A peptide comprising the sequence EGGGE (SEQ ID NO: 5) wherein the peptide is from five to fifteen amino acids in length.
2. The peptide of Claim 1 comprising a sequence selected from the group consisting of EGGGEEDQDFDL (SEQ ID NO: 1), EGGGEMDTTSYD (SEQ ID NO: 2),  
5 EGGGEEDQDYDLS (SEQ ID NO: 3) and EGGGEED (SEQ ID NO: 4).
3. A composition comprising the peptide of Claim 1.
4. A method of inhibiting Presenilin-1-mediated  $\gamma$ -secretase activity comprising contacting a cell capable of exhibiting such activity with the composition of Claim 1.
- 10 5. A peptide comprising the sequence QPVEA (SEQ ID NO: 10) wherein the peptide is from five to fifteen amino acids in length.
6. The peptide of Claim 5 comprising the sequence KAQPVEAGLQI (SEQ ID NO: 9).
7. A composition comprising the peptide of Claim 5.
- 15 8. A method of inhibiting tumor metastasis comprising administering to a subject in need of such treatment a composition comprising a polypeptide or peptide comprising the matrix metalloproteinase cleavage site of cadherin or a functional equivalent thereof, in an amount effective to inhibit tumor metastasis.
9. The method of Claim 8 wherein the peptide comprises the sequence QPVEA  
20 (SEQ ID NO: 10).
10. A method of inhibiting apoptosis comprising contacting cells undergoing apoptosis with a composition comprising a polypeptide or peptide comprising the matrix metalloproteinase cleavage site of cadherin or a functional equivalent thereof, in an amount effective to inhibit apoptosis.
- 25 11. The method of Claim 10 wherein the peptide comprises the sequence QPVEA (SEQ ID NO: 10).
12. A method of determining susceptibility to Alzheimer's disease comprising measuring the intracellular domain cleavage product of cadherin in a cell from a subject, wherein a reduction in the cleavage product relative to the levels in control cells from a  
30 normal subject is indicative of susceptibility to Alzheimer's disease.
13. The method of Claim 12 wherein the intracellular domain cleavage product is selected from the group consisting of N-Cad/CTF2, E-Cad/CTF2 and VE-Cad/CTF2.
14. A method for identifying an agent that modifies presenilin-1- $\gamma$ -secretase-like processing of cadherin comprising contacting a cell containing cadherin with a test

compound; measuring production of the intracellular domain cleavage product of cadherin; and comparing production of the cleavage product in cells contacted with the test compound to production in cells not contacted with the test compound; wherein a difference in production of the cleavage product in the presence of the test compound is  
5 indicative of an agent that modifies  $\gamma$ -secretase-like processing of cadherin.

15. The method of Claim 14 wherein the intracellular domain cleavage product is selected from the group consisting of N-Cad/CTF2, E-Cad/CTF2 and VE-Cad/CTF2.

16. The method of Claim 14 wherein the cell is contained within a mammal.

17. A method for treating familial Alzheimer's disease comprising administering to a  
10 subject in need of such treatment a composition comprising an agent that increases the levels of the intracellular domain cleavage product of cadherin in the subject.

18. The method of Claim 17 wherein the agent is the intracellular domain cleavage product of cadherin.

19. The method of Claim 18 wherein the agent is selected from the group consisting  
15 of N-Cad/CTF2, E-Cad/CTF2 and VE-Cad/CTF2.

20. The method of Claim 17 wherein the agent is Presenilin 1.

21. A composition comprising the intracellular domain cleavage product of cadherin.

22. The composition of Claim 20 wherein the intracellular domain cleavage product of cadherin is selected from the group consisting of N-Cad/CTF2, E-Cad/CTF2 and VE-  
20 Cad/CTF2.

23. A method for treating familial Alzheimer's disease comprising administering to a subject in need of such treatment a composition comprising an agent that reduces CREB-mediated transcription.